

Bronzization



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Essays in Bronze Age Archaeology

edited by
Heide W. Nørgaard and Samantha S. Reiter

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Picture taken by Heide W. Nørgaard

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Essays in Bronze Age Archaeology in Honour of Dr. Phil h.c. Helle Vandkilde on her 70th birthday

With contributions by Samantha S. Reiter, Katrine Balsgaard Juul, Laura Ahlqvist, Catherine J. Frieman, Joseph Maran, Marie-Louise Stig Sørensen, Kristian Kristiansen, Anna Tornberg, Paulina Suchowska-Ducke, Flemming Kaul, Dalia Pokutta, Dmitry Zenyuk, Kerstin Lidén, Ole Thirup Kastholm, Morten Ravn, Philipp W. Stockhammer, Svend Hansen, Anne Birgitte Gebauer, Mads Lou Bendtsen, Lasse Vilien Sørensen, Lene Melheim, Constanze Rassmann, Valentina Matta, Søren Dietz, Johan Ling, Daniel Berger, Ernst Pernicka, Zofia Stos Gale, Mike Parker Pearson, Louise Felding, Neil Wilkin, Anna Sörman, Christian Horn, Harald Meller, Johannes Müller, Janusz Czebreszuk, Casper Sørensen, Jutta Kneisel, Christopher Prescott, Silja Arnfríðardóttir Christensen, Martin Egelund Poulsen, Tobias Torfing, Anna Thusgaard Kristensen, Jesper Olsen and Heide W. Nørgaard.

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Introduction

Bronze, the Bronze Age and Bronzization

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The idea for this book was born in a restaurant. The chapter headings and contents were sketched out on napkins while the authors of this introduction outlined the evolutions we have witnessed in Bronze Age research since the start of our careers. One common element which kept cropping up was how much we (as have many authors in this book) were heavily influenced by Helle Vandkilde's research.

We (Heide and I) started as PhD students in 2009 as part of a small group of young researchers who came together from all over Europe to join Vandkilde's *Forging Identities* project. This specific Marie Curie training network was created to investigate the mobilities of culture. Main partners from five different countries were part of the project, including ten PhD students, four postdocs and five professors. Later, we learned that a secondary major aim of the project was to create lifelong cross-border bonds between researchers. 16 years later, we can unhesitatingly confirm that both the first and the secondary aims were attained. (It may also be of interest that 15 of the authors contributing to this volume were also associated with *Forging Identities* in various capacities.)

Since *Forging Identities* began, and in the intervening years since it came to a close, we have had a tremendous amount of new discoveries and new data, but this is – we would argue – not the most important aspect of how Bronze Age studies have altered. As prehistorians, a lot of what we do revolves around looking at an incomplete data matrix in order to retrofit the patterns they make into ancient realities. In short, we make stories out of what remains from the distant past. In actuality, our work often presents the datapoints which we perceive in the ground, gather from scientific analyses, or infer from the (pre)historical record as the *end-products of ancient events*.

This is where the *honourée* of the present volume steps out centre stage. Across the many research fields which have benefitted from her academic attention (see Balsgaard Juul,¹ this volume), Helle Vandkilde's

approach to studying the past is one which looks at data not as static entities or 'end products', but rather as fixed points *within dynamic historical processes*. In other words, Vandkilde looks at prehistoric data not as individual points, but rather as knots within a wide and interconnected tapestry.

In this, she follows along in the footsteps of some of the greatest thinkers of the modern era; her preoccupation with the long-reaching after-effects of change could link up well with the Hegelian dialectic (Hegel 2010) and the Annales School's *longue durée* (Braudel 1992). That being said, Vandkilde's contribution to Bronze Age studies goes far beyond the replication of different approaches and methods to prehistory; she has fundamentally changed the greater discipline itself. She has altered how we go about building our knowledge of the distant past and how we approach building bridges between the fixed datapoints that our research establishes, because she looks at data as a network representing processes of change.

In pursuit of her study of these processes of change, Vandkilde has concentrated particularly on globalisation, mobility, transcultures, and – as was the inspiration for this monograph – 'bronzization'. Bronze Age studies have changed chiefly because Helle Vandkilde's approach (the study of processes and their interconnectedness) is becoming more and more evident. In the following, we will give a short overview of some of the major cornerstones, putting them in context in relation to the new and exciting explorations, viewpoints, possibilities, and angles of cutting-edge Bronze Age work that come together in this volume.

Vandkilde has argued that globalisation is not the purview of modern times – in fact, it can very aptly be applied to the Bronze Age as well. Globalisation in the ancient past refers to what Vandkilde has called 'a

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world of things in transit' (2010: 903). In this she has been a continual inspiration to her colleagues and students (for globalisation, see also Vandkilde 2014a; 2016). Her research approach examines the varied and sometimes separate and/or differential flux of people, materials, and ideas as things. In so doing, she embraces the 'New Mobilities Paradigm' (Shellar and Urry 2006; Shellar 2021; Urry 2007). In point of fact, Vandkilde had already dived deeply into many of the precepts from the Mobilities Paradigm before it became known as such. In her landmark monograph *From Stone to Bronze* (Vandkilde 1996), she challenged and refined earlier ideas about a stiff and regimented changeover between era-defining materials (stone in the Neolithic and bronze in the Bronze Age; Thomsen 1836) which had formed almost a century's worth of archaeological thinking.

Vandkilde sees globalisation as a motor for change: novel materials and ideas became available brought about by contacts with new peoples and places. However, Vandkilde examines globalisation in prehistory as something which is greater than the sum of its parts. She sees it not as 'the fact that different cultures and economic systems around the world [were] becoming connected and similar to each other because of the influence of large multinational companies and of improved communication' (which is the *Oxford Learner's Dictionary* definition, Oxford Lexico 2024), but rather in relation to the expansion and intensification of relations across boundaries, writing: 'In [a] broad sense, globalization has always taken place ... [with the realisation] that each period of intensified wide-reaching interaction was uniquely constituted in a specific world historical context' (Vandkilde 2010: 905). She suggests, therefore, that we look at (pre) history as a place of flows (Vandkilde 2013a) and of travelling cultures (Vandkilde *et al.* 2015) rather than as a mono-directional march of increasing technological improvement (Vandkilde 2007). Through Vandkilde we have gained a glimpse of a Bronze Age world which was dynamic and which grew organically. As presented, this framework allows us to see the intense and long-distance connections evidenced by our various 'fixed points' (the mobility data from strontium isotopes, the isotopic and trace element analysis showing the exchange in metals, not to mention the tremendous amount of information from traditional archaeological approaches demonstrating the exchanges of objects and ideas), not as dry dots on maps, but as dynamic focal points around which an organic human network came into being.

As has also been argued by other scholars (Marshall 2015), there are certain areas in which those flows intensified. Here, too, Vandkilde has given us a means to come to grips with the transitional nature of change,

referring to such places as 'intersecting spheres of interaction' (Vandkilde 2016: 115, see also Vandkilde 2017b: 518). In so doing, she advances previous thinking on so-called 'hot' societies (Lévi-Strauss 1962) by characterising them in relation to the mechanics of social, political, economic and technological change. According to Vandkilde, such 'hotspots' (Vandkilde 2014b: 54) are performative and promote social climates of creativity, mobility and entrepreneurship, in which new ideas, processes and techniques can take root (Vandkilde 2007: 11-23). These focal points acted as would radio towers – receiving and relaying culture at high frequencies, which, as Vandkilde has posited, result in the formation of a cultural koine (Vandkilde 2014b: 54).

Many scholars the world over have examined change in different forms. We know, therefore, that it is not rhythmic: it flows and gushes, pools and collects in time with other processes – war, disease, technological change (i.e. Crellin 2020; Diamond 1997). In terms of later prehistory (an important distinction to make as, in many parts of Europe it was a period which still predated the advent of the written word), Vandkilde has identified intercultural mobility as one of the key driving engines setting the pace of change (Vandkilde 2014b: 68). Fanning out from the above-mentioned 'hotspots', and borne on the backs of intercultural migrants, Vandkilde has hypothesised the presence of what she calls 'transcultures', defining them as 'fashion[s], or...meta-culture[s], which moved rapidly over wide geographical areas and which underwent various transformations while still maintaining a distinct transculturality' (Vandkilde 2014b: 54).

The interaction between people and materials is what we in archaeology know as a 'culture'. The dynamic interactions between people, materials, objects and ideas which we see in the Bronze Age came to define the era. As Vandkilde writes, the process(es) of interaction within those transcultures 'literally made the Bronze Age. This multifaceted process in place and space is here termed bronzization' (Vandkilde 2016: 108).

Vandkilde's keen eye for detail and the enormous breadth of her disciplinary knowledge and academic capacity has enabled her to combine typology, socio-political patterns, archaeometric analysis, and archaeological theory (to name but a few) in order to reveal the complexities of our distant past. As such, the term 'bronzization', which she coined, reflects not only the adoption of bronze (for Vandkilde's work here see Vandkilde 1988; 1989; 1992; 1993; 1996; 1998b; 1998a; 1998c; 2005; 2010; 2017a), but the preceding processes which brought people into contact with bronze, and also entrains all the processes which came after, and whose echoes we may still feel today (see Vandkilde

2016; 2017b; 2022; Vandkilde *et al.* 2021; Vandkilde *et al.* 2024). Some of these processes are particular areas on which Vandkilde has a particular focus, such as her fascination with social identity across Europe (see Vandkilde 1999; 2006b; 2006a; 2013b; 2015; 2018a; 2018b) and the trade and exchange networks (see Nørgaard *et al.* 2019; 2021; Nørgaard *et al.* 2022; Suchowska-Ducke *et al.* 2015; Vandkilde 2020; 2021; Vandkilde *et al.* 2015; Vandkilde *et al.* 2024).

This volume is, therefore, intended as an ode to Vandkilde in honour of her 70th birthday, but also as a representation of the inspiration she has seeded, and continues to instill, throughout her career. Furthermore, it is also intended to present the state-of-the-art (and beyond) of European Bronze Age research from a Scandinavian point of view. As such, the chapters in this volume address major aspects of Bronze Age research, and they do so from different perspectives. In this, they reflect the dynamism of the past decades' research into a dynamic period. They are, in short, facets of a complex and interrelated whole series of processes involving, touching upon, and touching off from 'bronzization'.

The five parts introduce different thoughts regarding the theoretical concepts of a globalised Bronze Age world and its challenges, the scientific evidence surrounding the increased mobility often associated therewith, the role of metal, with a focus on Scandinavian networks, the sacred world of the Bronze Age, and aspects and evidence of Bronze Age living. The aim is to present current debates in research, broaden the horizon of established Bronze Age scholars, and to provide the interested reader (be they academics, students, or others generally interested in the past) with an in-depth introduction to the Bronze Age. These last might be the excuse for the several very extensive bibliographies, which, we hope, will allow the curious reader to explore the breadth and depth of the fascinating topic of bronzization according to their own particular research needs.

The theoretical reflections on the concept of bronzization (Part 1) begin with the question of a united identity. *Samantha S. Reiter* discusses similarities in habitus, material culture and aDNA in the Bronze Age to clarify the potential origins of European Identity. *Laura Ahlqvist* also sheds light on this topic more provocatively, asking if Bronze Age people might have 'thought' in bronze? Within the Scandinavian Bronze Age, she identifies a translation of complex ideas into symbols that, when depicted on bronze artefacts, allowed for a generalised and united understanding of a complex world.

To allow the reader to identify the underlying global aspects in the local peculiarities of the Bronze Age world, *Catherine J. Frieman* and *Joseph Maran* present different case studies which address the fundamental parameters of bronzization: globalisation, hotspot zones, transculturality. More specifically, Frieman addresses the oppositional character of local archaeological inquiries in our understanding of global networks, focusing on the ore-rich Cornwall region, and Maran uses the term 'glocalisation' to show that the creative fusion of foreign influence within hot-spot zones is the key for understanding the societal and cultural changes in the Argolid of the Shaft Grave era.

In her call for a greater reflection on the potential of the knowledge that our interdisciplinary archaeology brings in terms of prehistoric people, *Marie-Louise Stig Sørensen* asks why we do not address the emotional aspects of prehistoric individuals and the resulting behavioral changes of mobile people, such as the 'Egtved Girl'. By stating that not knowing is not a reason for not asking, she lifts studies of Bronze Age identities to a new level. The last contribution in this section by *Kristian Kristiansen* centres around the long-term economic processes which took place in the Scandinavian Bronze Age. With a focus on change and how regional change impacts neighbouring regions, Kristiansen explores the role of ideology in the maintenance of a shared Nordic idiom.

Within Part 2, the contributions focus on the mobile Bronze Age, giving examples of the archaeological and scientific evidence for mobility. Deep within the third science revolution (Kristiansen 2014), archaeologists tend to forget the huge potential of traditional archaeological methodologies. Here, a hand-picked selection of traditional and transdisciplinary methodological studies concentrating on the identification or interpretation of mobility in Bronze Age inspires readers to remember the potential of traditional methods and the power of combining methodologies, as well as some thoughts on how to go beyond these in future research. The topic of mobility is addressed from different angles. *Anna Tornberg* introduces the potential of biomolecular archaeology and combines it with osteological analyses to show how bronzization affected health and lifeways in southern Scandinavia at the beginning of the Bronze Age. Within her contribution, Tornberg discusses the biocultural consequences of prehistoric globalisation for individuals and populations.

Evidence of mobility has different implications. *Paulina Suchowska-Ducke's* focus is on so-called artefact mobility. She offers several examples of artefact categories that

represent aspects of cultural transmission, translation, and adaptation between the Bronze Age cultures of temperate Europe and the Mediterranean. Her article not only emphasises the trade and exchange networks that emerged across and beyond Europe, but also lays a foundation for an investigation into the complex social processes that shaped objects through people, and, conversely, shaped people through objects. Taking as his starting point the sun-horse phenomenon, *Flemming Kaul* argues that specific symbols in Bronze Age Europe shares religious expression. In a transregional comparison Kaul investigates the potential for the loss of meaning when symbols are stylised under different social settings in time and space.

Dalia Pokutta, Dmitry Zenyuk and Kerstin Lidén take the reader to Bronze Age Russia to examine the crucial role played by nomadic tribes of the steppe as intermediaries of cultural exchange. With the example of the Litvinovka burial barrow in the Lower Don region, the authors scientifically investigate the lifeways of Bronze Age people during the transition from the Yamnaya to Catacomb cultures and the region's integration with wider cultural and economic systems across Eurasia.

While the last decades have shown an increasing amount of interest in various aspects of Bronze Age mobility, there has been significantly less discussion within the generic literature of the means by which this mobility was executed. *Ole Thirup Kastholm* and *Morten Ravn's* contribution begins with a detailed description of Denmark's Late Bronze Age 'Varpelev Boat'. Importantly, this unique find is contextualised in relation to both Scandinavian (in particular) and European (in general) boat finds, and the technological differences between them. They highlight that the extensive maritime-based transportation of goods, people, and ideas which took place during the Bronze Age 'shaped' the boats themselves. This section of our book, focusing on the scientific and archaeological evidence for mobility, concludes in a non-traditional way. *Philipp W. Stockhammer's* contribution presents the potential of the grand total of the detailed scientific and archaeological knowledge that scholars have gathered to date to tell stories about the past. Indirectly answering *Marie-Louise Stig Sørensen's* question (Chapter 5), *Stockhammer* explores and explains by means of examples how detailed personal stories can be told based on scientific facts and the posing of personal questions.

Part 3 of the book concerns bronzification, a term which has been lately much used in scholarly circles (see *Melheim and Nørgaard*, in this volume), specifically in relation to the importance of metal exchange networks over the process of Europe's bronzification. This section gathers contributions regarding technology, typology,

and trade relative to the exchange networks of the European Bronze Age. We open with an attempt to explain the drivers for the diffusion of technological knowledge, with *Svend Hansen* taking the reader through thousands of years of the history of technological developments, thereby also providing a very detailed bibliography for further reading. *Hansen* examines in more detail three examples of the diffusion of products (daggers), formulas (recipes for copper-silver alloys), and technologies (lost-wax casting), thereby illuminating the chronological and spatial dimensions of the transfer of knowledge at the beginning of the European Bronze Age. The importance of bronze to the Bronze Age is clear. The chapter by *Anne Birgitte Gebauer, Mads Lou Bendtsen and Lasse Vilien Sørensen* addresses the key importance of the dawn of metallurgy in Scandinavia. The authors introduce the huge amounts of copper artefacts imported into the Baltic region in the 4th millennium BCE and present the latest interdisciplinary ideas on the origins of those imports. Evidence of casting equipment in Neolithic Denmark suggests that these established networks exchanged goods as well as knowledge. The transfer of knowledge is a topic that *Lene Melheim* and *Heide W. Nørgaard* also address when discussing evidence of communities of practice within the organisation of metalwork activities in the Middle Bronze Age. They present a picture of shared technological practices upheld and modified across the centuries by various kinds of workshop communities, and which, while geared towards local or regional consumption, nevertheless interacted in divergent manners with outside networks, depending on the individual focal points of those workshops.

Constanze Rassmann's chapter sheds light on the networks that supplied Scandinavia with another prestige material – gold. From the basis of the Danish Arildskov hoard and its three golden armrings, she discusses the interconnectedness of trade networks and technological advancements in metalworking. *Valentina Matta* and *Søren Dietz* take us to southern regions that likely played a crucial role in the network of European metal trade during the Middle and Late Bronze Age. *Matta* introduces the Nuragic civilisation (1800-720 BCE) and its significance for the Scandinavian Bronze Age, giving a well-rounded background both within the text and through her bibliography for further studies. The research by *Søren Dietz* is of a different nature, examining the origins of four so-called 'bronzetti', the figurative art of the Nuragic civilisation curated at the National Museum in Denmark.

The contribution by *Heide W. Nørgaard, Johan Ling, Daniel Berger, Ernst Pernicka, Zofia Stos Gale and Lene Melheim* unites the work and efforts of two of the largest Scandinavian archaeometallurgy research teams for the first time. It presents an educated guess on the

metal networks which led to Scandinavia throughout the entire Bronze Age period. Isotopic evidence of metal artefacts in Scandinavia is used to define, model and compare trade connections between the mining regions in Europe and to denote the ways by which knowledge exchange might have happened from the Late Neolithic to the middle of the 1st millennium BCE.

Part 4 groups together research that we have placed under the umbrella term of the coded Bronze Age. These contributions touch upon Bronze Age society and the construction of value, and various united or different world views within the European Bronze Age. *Mike Parker Pearson* discusses the evidence of social hierarchy based on the excavation of a 500-year settlement sequence at Cladh Hallan in the Western Isles (Outer Hebrides) of Scotland. Arguing that defended ring-forts and enclosures were a key feature of social structure, he evaluates Britain's Late Bronze Age settlement record in relation to evidence for social inequality. By examining Nordic Bronze Age burials, *Louise Felding* illustrates shifting gendered expressions of identity from the Early to the Late Bronze Age. She highlights the gendered balance in Nordic Bronze Age society, by means of examples such as Late Bronze Age depositions dominated by female objects.

Neil Wilkin's contribution responds to the growing appreciation of the overlapping spectra of economic, social and spiritual values and mirrors recent developments in how prehistorians think about metalwork deposition in northwest Europe during the Bronze Age. He studies depositional behaviours during the British Bronze Age to define and develop the concepts of 'morality' and 'ethics'. *Anna Sörman* also works with the concept of fragmentation within northern and western Europe's Middle and Late Bronze Age metal deposits. She emphasises that the current interpretation of fragmented metal deposits as scrap-boards should be challenged, and the concept of the 'secondary products revolution' can be useful for illustrating the diverse range of practices enabled by the increased fragmentation in the Late Bronze Age.

Nordic Bronze Age rock art is seen as evidence for the reconstruction of social, religious, and economic aspects of past societies, especially the human-like figures which seem to indicate high-status individuals. By studying a large corpus of anthropomorphic figures in rock art, *Christian Horn* seeks to understand which activities, body postures, and body characteristics were considered appropriate for elite individuals in terms of gaining status based on real-world activities. *Harald Meller* investigates the origins of snake depictions in the early Bronze Age, focusing on the Únětice culture and based on the Nebra hoard. He argues that the depiction of the snake in combination with the sun and ship

appear together for the first time in the Nebra deposit and that, towards the end of its period of use, these became the central elements of the myth of the sun's journey through day and night.

The lived Bronze Age is the focus of Part 5, looking at settlements and burials of the European Bronze Age.

This section is introduced by two contributions focussing on the monumental burial mounds of the Tumulus culture. *Johannes Müller* and *Janusz Czebreszuk* explain how the practice of constructing large burial mounds first appeared with northeastern Únětice groups and was later adopted in central Germany. The authors conclude that different social practices of varying temporal performance existed between Greater Poland and central Germany, and that these played a role in internal social transformation processes. In his contribution, *Casper Sørensen* explores the newly proposed concept of 'mound durée' (a timeless aristocratic ethos) encompassing the burial traditions of the burial mounds of the Single Grave culture, the Late Neolithic, and the Early Bronze Age cultures in southern Scandinavia. Based on the idea that a shared vision of burials and identities existed then, including a prevailing symbolic warrior identity, he investigates the potential of grave goods as symbolic objects and their expressions of similar 'symbolic' identities. *Jutta Kneisel* illuminates the role of fire in burial customs of the European Bronze Age via an interdisciplinary strategy. Presenting a large number of early cremation burials, her focus is on the use of fire in burial rituals before cremation became the common form of burial custom, which includes the deliberate burning of mortuary chambers and grave constructions.

Christopher Prescott's contribution moves away from the exclusive discussion of funerary monuments and sheds light on the entirety of a specific region. Via a three-tiered scale in a study of the southwestern region of Lista, southern Norway, he suggests that a chronologically deep and extensive use of the landscape, including agriculture, mortuary practices, production (metallurgy) and ritual, characterises Lista as a maritime bottleneck in western Scandinavia. He further concludes that it seems highly likely that older monuments structured later construction (i.e. the construction and use of monumental mounds).

However, Bronze Age societies are characterised not only by their material culture, rituals and burial monuments. Among the most important and most frequent material legacies of Bronze Age societies are their settlements. *Silja Arnfríðardóttir Christensen* and *Martin Egelund Poulsen* present evidence from Jutland (Denmark) for the transition from two- to three-aisled longhouses. They argue that this transition is not a linear chronological

evolution, but should instead be seen more as involving a longer period, with experimentation with different forms of construction. According to the authors, the main reason for the three-aisled revolution should be connected to the need for *monumental* architecture, as the culmination of building large longhouses coincides with the decline in erecting large round barrows. The new investigations at the Late Bronze Age settlement at Veldbæk, Jutland, are presented by *Tobias Torfing, Anna Thusgaard Kristensen* and *Jesper Olsen*. In their contribution, besides the archaeological evidence, the authors also present hitherto unpublished natural scientific evidence indicating that Veldbæk was one of the first large villages. The argument might run, therefore, that the formation of villages already existed in NBA VI and was accompanied by important changes in agricultural practice.

In all, the collected contributions within this volume study change and process, and are also themselves representations of the changes that scholarly inquiry into the Bronze Age has undergone. As Helle Vandkilde has shown in her research, these different windows into Bronze Age society, material, processes, trade, production, mobility, statecraft, technological change, and health (to name but a few) all combine to open different vistas onto a dynamic and interconnected world. It is in following this common pathway of plural approaches that we can best come to grips and understand how ‘bronzization’ came about.

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Figure 1: Helle Vandkilde in autumn 2024 in front of the nuraghe Santu Antine, in the centre of the Cabu Abbas plain, on Sardinia (picture H. Nørgaard).

Helle Vandkilde – A groundbreaking pioneer in Danish archaeology

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In 2004, Helle Vandkilde was appointed Research Council Professor of Prehistoric Archaeology at the former Institute of Anthropology, Archaeology and Linguistics at Aarhus University, thereby becoming the first female professor of prehistoric archaeology in Denmark. That appointment made Vandkilde a groundbreaking pioneer in Aarhus archaeology and she is an invincible, archaeological force of nature (Juul 2024).

Vandkilde was born on 19th January 1955. She married Flemming Højlund in 1987 and became a mother to her son (Nicolai) in 1988 and her daughter (Christin) in 1990 (Læsøe Engberg 2005). She is keen on separating her personal life from her work life and has not given many interviews. Although she is protective of her privacy, she is warm and supportive as well as being one of the brightest academics in Danish archaeology.

She is a well-respected Danish archaeologist and professor of archaeology at the Department of Archaeology and Heritage Studies at Aarhus University (see Harding 2021). Vandkilde is particularly known for her many years of research on the Bronze Age and the Late Neolithic as well as on material culture, identities, prehistoric war and warrior culture, as well as globalisation in the past and present (e.g. Felding *et al.* 2020; Matta and Vandkilde 2023; Nørgaard *et al.* 2021; Otto *et al.* 2006; Tornberg and Vandkilde 2024; Vandkilde 2024a; 2024b; 2017a; 2017b; 2016; 2015; 2014; 2007a; 2007b; 1996; Vandkilde and Matta 2022; Vandkilde *et al.* 2024; 2023; 2015). She has conducted several large international research projects benefitting European archaeology and is the author of three monographs (Vandkilde 2017a; 2007a; 1996) as well as more than 100 research articles. Vandkilde has conducted field research in Denmark, Sweden, Greece, Romania, Papua New Guinea. and Sardinia.

From Stone to Bronze – early career

In 1979, Vandkilde became a bachelor of classical archaeology at the University of Southern Denmark in Odense. That same year she began studying prehistoric archaeology at the Department of Prehistoric Archaeology at Aarhus University. In 1985, she became MA in prehistoric archaeology. This led to her doctoral research; in 1996 she became Dr phil. (habilitation) with her thesis *From Stone to Bronze. The Metalwork of the Late*

Neolithic and Earliest Bronze Age in Denmark (Vandkilde 1996).

From 1998-2004 Vandkilde was employed as a postdoc at the Department of Archaeology and Classical History at Lund University, Sweden. Here she directed the Pile project, which examined a Swedish axe hoard found in Pile in 1864 (Læsøe Engberg 2005). The deposit consists of 27 artefacts of copper, bronze, and silver dating to 2000 BC (Vandkilde 2017a). She has been a docent at the Department of Archaeology and Classical History at Lund University since 1999.

In 2003-2004, Vandkilde was a visiting professor at the Institut für Ur- und Frühgeschichte at Christian Albrechts Universität in Kiel, Germany (Læsøe Engberg 2005).

The first female professor of Prehistoric Archaeology at Aarhus University – later career

In 2004, Vandkilde became Research Council Professor at the Department of Prehistoric Archaeology, at the former Institute of Anthropology, Archaeology and Linguistics at Aarhus University (Læsøe Engberg 2005; Vandkilde 2004). She held the position as research council professor until 2009, when she was appointed as the professorial chair at the Department of Archaeology and Heritage Studies at Aarhus University. This title is still held by Vandkilde today. From 2013-2018, she was furthermore director of the Materials, Culture and Heritage research programme at Aarhus University.

In 2014-2015, Vandkilde was a visiting professor and had a fellowship at the DFG Exzellenzcluster Asien und Europa at Heidelberg Academy of Sciences in Germany.

Vandkilde is known for her great leadership and ability to create large international research projects (Læsøe Egeberg 2005). The latest project where Vandkilde oversees the major project leadership began in 2024 and will continue till 2027. Below is a list of selected research projects.

Metals and Giants, 2024-2027

In co-leadership with Mads Kähler Holst (director of Moesgaard Museum) and Gianfranca Salis (Soprintendenza of south Sardinia), Vandkilde is



Figure 2: Helle Vandkilde in summer 2024 east of Mykene beneath a Bronze Age bridge (picture F. Højlund).

primary investigator of the research project *Metals and Giants*. This archaeological research project investigates the Nordic connection with Bronze Age Sardinia starting with the iconic horned-helmet warriors from Viksø, Kallerup, Grevensvænge, and Tanum. The project is funded by the Augustinus Foundation. So far, the preliminary results have created headlines all over Europe. *Metals and Giants* is the first research project which compares human horned-helmet warrior figurines across such a large geographical area. Furthermore, the project includes metallurgical analysis of isotopes. This research project includes the participation of Heide Wrobel Nørgaard (Moesgaard Museum), and David Stott and Peter Jensen (Aarhus University). The project's partners include archaeologists and scientists from Curt-Engelhorn Zentrum Archäometrie Mannheim, The National Museum of Denmark, the University of Cagliari, the University of Sassari, and the University of Gothenburg.

Violence and Warfare, 2021-2023

Jointly with bio-archaeologist Anna Tornberg, (University of Lund), Vandkilde was engaged in the *Violence and Warfare in the Nordic Corded Ware Complex* research project. The project received funding from

Riksbankens Jubileumsfond: The Swedish Foundation for Humanities and Social Sciences. It investigated traces of violence and warfare in burials from the Corded Ware culture in Scania, Denmark, and Germany (Tornberg and Vandkilde 2024).

The Mountain Sanctuary of Matzanni, Sardinia, 2019-2021

Vandkilde directed the research project *The Mountain Sanctuary of Matzanni in Sardinia* together with Mads Kähler Holst (Moesgaard Museum). The project illuminated gigantic heroes, metals, and a Nordic connection by means of high-tech archaeology. The research project received funding from the Danish Ministry of Culture and achieved fabulous results, not least due to the participation of the contemporary PhD project by Valentina Matta (then of Aarhus University), which Vandkilde was supervising at the same time (see Berger *et al.* 2023; Matta *et al.* 2020).

Connecting Europe 1700-1500 BCE, 2018-2020

From 2018-2020, Vandkilde directed the research project *Connecting Europe 1700-1500 BCE* through time simulations of multiple high-resolution ^{14}C with Tibor-Tamás Daróczy (then at Aarhus University) as investigatory fellow. The research project was funded by Marie Skłodowska-Curie Actions as part of the European Union's Horizon 2020 scheme.¹

Forging Identities, 2009-2012

From 2009-2012, Vandkilde was director of the Marie Skłodowska-Curie Actions Initial Training Network *Forging Identities: The Mobility of Culture in Bronze Age Europe* project. Besides being primary investigator, Vandkilde was also the coordinator of the 18 European partner universities, the ten PhD scholars, and the four postdocs. The aim of the project was to investigate the intercultural mobility of people in the Bronze Age through various types of research, including archaeology, metallurgy, biochemistry, and bone studies (Suchowska-Ducke *et al.* 2015a; 2015b).

Archaeological and Social Anthropological Perspectives on War and Society 1999-2002

Vandkilde took the initiative to launch a research project dealing with civilisation and war, financed by the Research Council for the Humanities and headed by herself jointly with Professor Henrik Thrane (Aarhus University) and Professor Ton Otto (Aarhus University) (Otto *et al.* 2006).

¹ Ref: <https://cordis.europa.eu/project/id/797494/it>

Honours and awards

Throughout her career, Vandkilde has been the recipient of many certificates of honour and awards. Below is a selected list.

Member of Academia Europaea, 2019

In 2019, Vandkilde was elected a member of the Academia Europaea – part of the Academy of Europe for excellence in science and scholarship. Academia Europaea is an NGO promoting European research and education and is affiliated with the European Commission and distinguished national academies in Europe.

Doctor Philosophiae Honoris Causa, 2019

Vandkilde was appointed Doctor Philosophiae Honoris Causa or Fil. Dr. h.c. at Lund University in 2019.

The Prehistoric Society's Europa Prize for 'Outstanding contribution to European Prehistory', 2017

In 2017, Vandkilde was the recipient of The Prehistoric Society's Europa Prize in recognition of her contribution to European prehistory. This was celebrated with a conference at Southampton University in Vandkilde's honour.

Kraks Blå Bog, 2014

Helle Vandkilde was admitted to Kraks Blå Bog ('Krak's Blue Book') for her accomplishments in 2014.

Member of Shanghai Archaeology Forum, 2013

In 2013, Helle Vandkilde was elected a member of the Shanghai Archaeology Forum of the Chinese Academy of Social Sciences. Vandkilde is the only professor of archaeology in Denmark to receive this honour.

Member of Deutsches Archäologisches Institut, 2007

Vandkilde was elected a member of Deutsches Archäologisches Institut under the Academic Branch of the German Ministry of Foreign Affairs in 2007 as a recognition of her contribution to European archaeological research and collaboration. This is an honour that very few non-German nationals are granted.

Erik Westerby Prize, 2005

In 2005, Vandkilde received the Eric Westerby Prize in recognition of her outstanding archaeological research (Læsøe Engberg 2005).

Vandkilde has additionally been elected a member of several scientific panels and boards, including:

- 2022. Elected member, Professorial Panel Aarhus University for promotion of new professors.
- 2019-2023. Chairing the International board 'ROOTS', Christian Albrechts Universität in Kiel, funded by DFG, Deutsche Forschungsgemeinschaft Exzellenz Cluster.
- 2019-2020. Executive Board. Independent Research Fund Denmark, Humanities.
- 2018-2023. Review Panel. Independent Research Fund Denmark, Humanities.
- 2018-2023. Scientific Advisory Board of The National Museum of Denmark.
- 2014-2022. Executive Board and Review Panel, Aarhus University Research Foundation.
- 2010-2017. ERC Expert Panel: SH6 'The Study of the Human Past'.
- 2008-2017. Review Panel. Riksbankens Jubileumsfond: The Swedish Foundation for Humanities and Social Sciences

The strong-minded trailblazer

During her 20 years of professorship at Aarhus University, Helle Vandkilde has been a true force of nature for European archaeology. For many women and men in Danish archaeology she has also been known as a strong-minded pioneer, trailblazing her way through the world of academia.

In 2025 we will celebrate the 150th anniversary of women in Denmark gaining access to study at university. Mary Beard has described how most people today still imagine a professor as male. The mere thought of a woman with power can be hard to deal with (Beard 2018: 54 ff). The many arguments against women have been researched thoroughly by Birgitte Possing, concluding that women need more than skills to be able break the so-called 'glass ceiling' (Possing 2018: 257 f). Vandkilde seems to have all that is needed: tremendous knowledge within her fields of expertise, the ability to explore new areas, the skill to think up new projects and raise funding for their execution, not to mention the enthusiasm and perseverance to pass on her knowledge to new generations of students. Truly, she has inspired many younger researchers to follow in her footsteps by being a true role model.²

In 2005, a colleague described Vandkilde as 'a reliable partner who takes her profession seriously and knows her stuff. At the same time, she has excellent leadership

² The author of this article about the jubilarian would like to highlight that a true role model is a person with the ability to show that women are not confined to being the 'second sex' as defined by Simone de Beauvoir (de Beauvoir 2021: 55 ff).

skills, is full of ideas and manages to bring a group together. She is a true project creator. However, her enthusiasm can sometimes get the better of her. She is not a born diplomat and can be very direct in her statements' (Læsøe Engberg 2005). These characteristics have led to vast amounts of new knowledge on the European Bronze Age.

Helle Vandkilde might not see herself as part of an important movement, trailblazing the path for more women in academia, but she is. She is a true role-model to all of us!

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